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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,079	05/30/2006	Johannes Petrus Ansems	NL031174US1	1637

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EXAMINER	
ROBINSON, LAUREN E	

ART UNIT	PAPER NUMBER
1794	

MAIL DATE	DELIVERY MODE
11/18/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/596,079	ANSEMS ET AL.	
	Examiner	Art Unit	
	LAUREN ROBINSON	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 August 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 May 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claim 11 is objected to because of the following informalities: Claim 11 is objected to because the claim is a vehicle roof of claim 9. However, the vehicle roof is claim 10 and therefore, claim 11 will be interpreted as being dependent on claim 10 and will be examined as such. Appropriate correction is required.

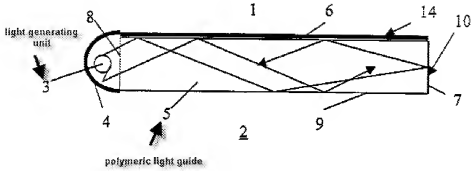
Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being obvious over Haering et. al (US Publication No. 2002/0167820) in view of Arbab et al. (US Publication No. 2002/018094) and as evidenced by Xu et al. (US Pub. No. 2002/0006586) and Bernards et al. (US PN. 6,280,838).

Consider claims 1 and 9-11: Haering et al. teach a light-guiding system for vehicle roofs (abstract) comprising a light guide comprised of a transparent polymeric material (Par. 0010), a light-coupling means (light generating) for coupling light into the light guide (abstract) and the light that is coupled into the polymeric material is guided substantially through the material which is illustrated in Figures 1-3. A representative illustration of the system is provided below.



However, they are *silent regarding the above light guiding polymeric material being interposed, and therefore an interlayer laminating material, between two glass sheets and the light coupled into the interlayer being guided into the interlayer to avoid light from traveling through the glass sheets*

Consider above light guiding polymeric material being interposed, and therefore an interlayer laminating material, between two glass sheets.

While Haering et al. is silent regarding the two glass sheets with the polymeric material interposed there between, the reference suggests that the above light-guiding assembly system is produced in order resemble and replace a sunroof while still having the positive effects of a sunroof while reducing the negative effects (Par. 0003-0013). From this teaching, one of ordinary skill in the art would recognize that in order to obtain a vehicle roof that resembles and can replace a sunroof, then one would want to produce the above system assembly as much like a sunroof as possible.

Arbab et al. teach glass compositions used in applications such as sunroofs for vehicles (Par. 0047-0048) and that typical sunroofs are produced using two glass

sheets with a polymeric material interposed between (Par. 0046 and 0052). Also, they teach that the glass sheets preferably are made of a light absorbing material in order to absorb ultraviolet radiation (Par. 0049) and that a sunroof to produce a vehicle roof ideally is transparent (translucent) (0049 and 0052).

Due to it being described above that one would recognize the desire to produce the assembly of Haering et al. as much like a sunroof as possible, from the above teaching of Arbab et al. one would recognize that a typical and desirable sunroof would be comprised of two glass sheets with a polymeric material there in-between, the glass sheets being comprised of a light-absorbing material and the overall laminate comprising the roof being transparent.

As such, it is the examiner's position that it would have been obvious to one of ordinary skill in the art at the time of invention to modify Haering et al. to include that the above system assembly can be interposed between two glass sheets, therefore making the polymeric material an interlayer polymeric laminating material, wherein the sheets are made of absorbing light material and the overall assembly comprising the roof being transparent, in order to obtain an assembly that resembles and acts as much like a sunroof as possible while eliminating any negative effects present in typical sunroofs.

Also, since the above light guiding assembly illustrates that the light coupling means couples the light directly into the polymeric material which is now the interlayer for the above laminate structure; this will correspond to applicants' limitation.

Consider the light coupled into the interlayer being guided into the interlayer to avoid light from traveling through the glass sheets

Although the reference does not specifically disclose that the light coupled through the interlayer light guiding assembly in order to avoid light from traveling through the glass sheets, Haering does teach that a reflective covers (14) and (4) can be applied to the interlayer in order to reflect light so that the light does not travel out of these surfaces. Therefore as the interlayer light guiding assembly now provided between two glass sheets will have the light coupled through the interlayer and the light will not travel in the above glass sheet.

While the reference does not disclose a reflective cover along the bottom surface, which would avoid light from traveling through the bottom glass sheet, this would have been obvious to one of ordinary skill. For example, while Haering illustrates throughout that it is desired that light be transmitted through the bottom of the interlayer so that light can be bright in a passenger compartment, Haering also teaches that reflective surfaces can be used on the bottom in order to reflect light back into the waveguide although some light is transmitted into the passenger compartment (0013-0017).

From the above teaching, it is the examiner's position that one would recognize that while having light exit through the bottom in the passenger compartment is desired in Haering, that light can be reflected from this surface if desired and it is the examiner's position that in cases, one of ordinary skill would desire such a reflective surface because it is known that if increasing amounts of light are flooded into a passenger compartment, then the light can reflect of windshields, etc. and alter the safety of a driver especially a driver's vision at night. Therefore, if one desired to control the light

and/or form a more calming environment, such as not having the light so bright, etc., they would recognize that darkening can be obtained by having reflective surfaces on the bottom surface of the interlayer and one specific reflective surface that prohibits the flooding of light is the reflective surface (14) as taught by Haering. Therefore, one would see that if it was desired to obtain a darker environment for reasons of above, that the light guide interlayer of Haering could be used but it could be modified by placing a reflective surface, especially a layer (14), on the bottom surface as this would be most efficient for prohibiting increased brightness.

As such, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Haering to include that a reflective layer 14 can be placed on the bottom surface as well as the top surface in order to control the amount of light traveling into the passenger compartment and therefore, enhance the safety of the driver by prohibiting increased amount of light which would reflect off the windshield, etc.

By performing this modification, the light coupled into the interlayer will avoid light from traveling through the glass sheets due to the reflective layer being both on the top and bottom surface with the two glass sheets applied thereon **(Claims 1 and 9-11)**

Consider claims 2-3: As discussed, Haering et al. teach a light-guiding assembly and was modified above to include all the limitations of claim 1. Also, they teach that titania is added to the material (Par. 0014). However, the reference is *silent regarding the refractive index characteristics of claims 2-3.*

While the reference does not specifically disclose the difference in refractive index between the interlayer and glass sheets, the examiner notes that it is well known

in the art that varying the refractive index of different layers within a laminate will cause light traveling through the material to be reflected in different ways and this reflection will in turn guide the light in the direction and manner desired by one of ordinary skill. This concept is evidenced in paragraph 0003 of Xu et al. (US Pub. No. 2002/0006586) wherein they include that different layers having varying refractive indexes will cause light reflection and this will affect the manner in which light is guided through the material. Also, it is known in the art that the refractive index above can be adjusted by the addition of different materials having varying refractive indexed and this concept is evidenced by Bernards et al. (US PN. 6,280,838) (Col. 3, lines 45-67).

The examiner notes that the above reasoning illustrates that the refractive index of various layers is a result effective variable and it is known in the art that the refractive index can be adjusted by the addition of metallic materials which will in turn change the optical property of guiding light above and through routine experimentation, one can obtain desired results. Therefore, one of ordinary skill in the art would have found it obvious at the time of invention to modify Haering et al. to include that the refractive index of the layers can be optimized to provide any value, such as the ones claimed by the applicants wherein the interlayer is higher than 1.57 and the values can provide the interlayer having a higher index than the glass, in order to obtain desired optical results of guiding light through the material in a certain manner **(Claims 2-3)**.

Consider claims 4-5: Haering et al. also teach that the above mentioned reflective covers (refractive layers) can be added to the interlayer to reflect back any light that is scattered(Par. 0015) and that a reflective cover is adjacent to the light-guide as

illustrated as "14" in Figure 1. Therefore, the reflective cover will be between the first modified glass sheet and the interlayer. However, the reference is *silent regarding an addition reflective cover being on the bottom side of the light guide, adjacent the interlayer and between the second modified glass sheet and both reflective covers having a lower refractive index than the interlayer and the refractive index of the reflective covers having a refractive index of 1.50 or lower.*

While the reference does not specifically disclose the use of a reflective layer on the bottom side of the interlayer, the examiner notes that as discussed above, Haering et al. teach that the reflective cover is used to reflect scattered light back into the waveguide. Also, although in one embodiment as shown in the figures have all the light traveling through the interlayer (Figure. 3), some embodiments have the light reflecting back into the interlayer by way of the bottom of the interlayer. From this teaching, it is the examiner's position that one of ordinary skill in the art would recognize that if light can be reflected back into the light guide by reflecting off of the bottom portion and one wanted to obtain a reduction in scattered light into the vehicle cabin, then an additional reflective cover such as the one added to the top could be added to at least a portion of the bottom surface of the interlayer in the same manner (adjacent to interlayer and in between interlayer and glass).

Also, as discussed above, the refractive index of different materials is a result effective variable and it is known that by adjusting the refractive index by the addition of metallic compounds, desired guiding of light can be obtained based on reflection.

As such, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Haering et al. to include that an additional reflective layer can be added to at least a portion of the bottom of said interlayer, adjacent to interlayer and between the interlayer and glass, in order to reflect certain light back into the waveguide and reduce certain light scatting, and also to optimize the refractive index of each layer by the addition of metallic compounds to include any values, such as the reflective covers having a smaller refractive index then the interlayer such as lower than 1.50, in order to obtain desired optical results of guiding the light **(Claims 4-5)**.

Consider claim 6: As discussed, Haering et al. disclose a alight guide assembly that was modified to include all the characteristics of claims 1 and 4. However, they are *silent regarding the refractive index of the interlayer and the glass sheets being approximately the same.*

While the reference does not specifically disclose this limitation, as discussed the refractive index of various layers affect the way in which light travels through a material and one of ordinary skill in the art would know that the index of the layers could be optimized by adding metallic compounds in order to obtain desired results. As such, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Haering et al. to include that the refractive index of the interlayer and the glass sheets can be optimized to include any value, including having a refractive index of refraction that is approximately the same, in order to obtain desired optical results of light travel through the material **(Claim 6)**.

Consider claims 7-8: Also, as discussed, the light-coupling means is adapted to couple the light into the interlayer and as illustrated in the figures, a majority of the light is supplied to the interlayer by the coupling means **(Claim 7)**. Further, as modified a glass sheet will be provided all along the top of the system and below the system. Also, from the above figure wherein the interlayer is from lateral surface 8 to lateral surface 7, if a glass sheet is stretched all along the system assembly, then it will cover the light coupling means. Therefore, upon modification, it is inherent that prior to the light coupling means being inserted into the assembly with the glass sheets thereon, there would have been a recess that was adapted to receive the light-coupling means **(Claim 8)**.

Response to Arguments

Applicant's arguments filed August 19, 2008 have been fully considered but they are not persuasive.

Applicants argue on page 10 that the combination of references do not teach or suggest the present invention as claimed.

Specifically they argue that a light-guiding assembly for coupling light "substantially" into an interlayer interposed between glass sheets is no where disclosed in Haering and Arbabs alone or in combination but at best, into two glass sheets and the interlayer.

This is not persuasive because the claim reciting that the light is coupled substantially into the interlayer is taught in Haering as it is illustrated that all the light is

coupled through the interlayer prior to any light exiting through surfaces of said interlayer. Therefore, 100% of the light will be coupled initially into the interlayer.

Applicants also argue on page 10 that without using impermissible hindsight, there is simply no suggestion or motivation to provide a light-coupling means for coupling light into an interlayer interposed between glass sheets in order to avoid light traveling through glass sheets.

This is not persuasive because while the combination of Haering and Arbab will have the interlayer between two glass sheets which as all of the light coupled therein, Haering was modified above to include that if desired, reflective surfaces can be applied to both top and bottom surfaces in order to control and avoid increased amounts of light exiting the interlayer and thereby, this would also avoid light from traveling through the top and bottom glass sheets. Also, this is not impermissible hindsight because the reference of Haering illustrates methods such as the reflective layers which can avoid light travel and from what is known and obvious to one in the art, light into a passenger compartment will desirably be adjusted for safety, etc.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAUREN ROBINSON whose telephone number is (571)270-3474. The examiner can normally be reached on Monday to Thursday 6am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on 571-2721284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lauren E. T. Robinson
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